

Figures

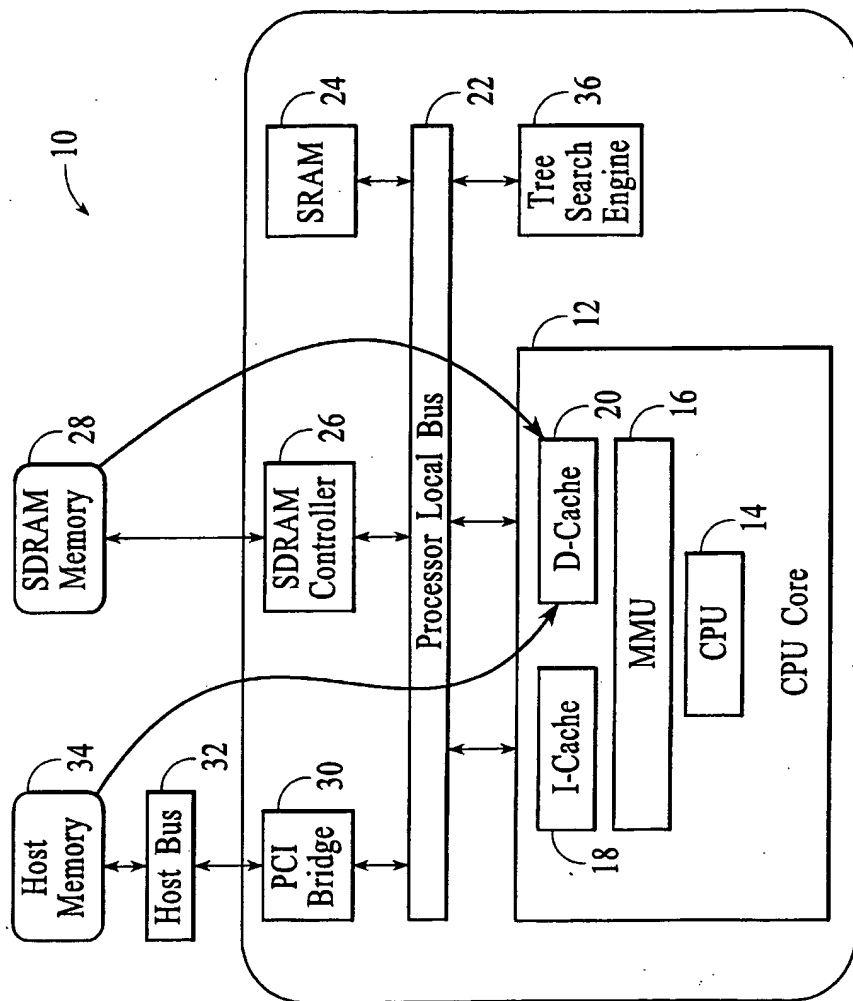


FIG. 1

Optimization of FM/SM Group Size based on 12 Level Tree

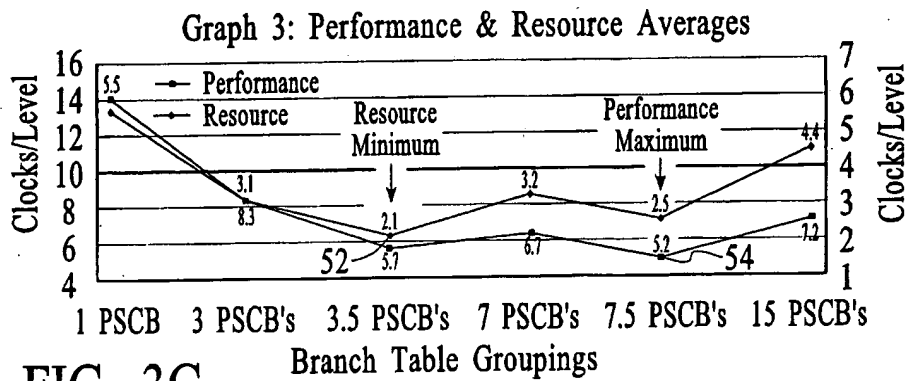
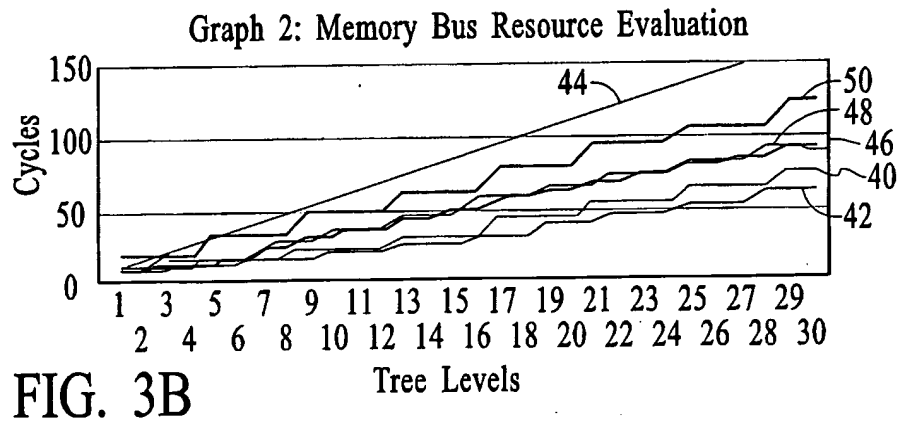
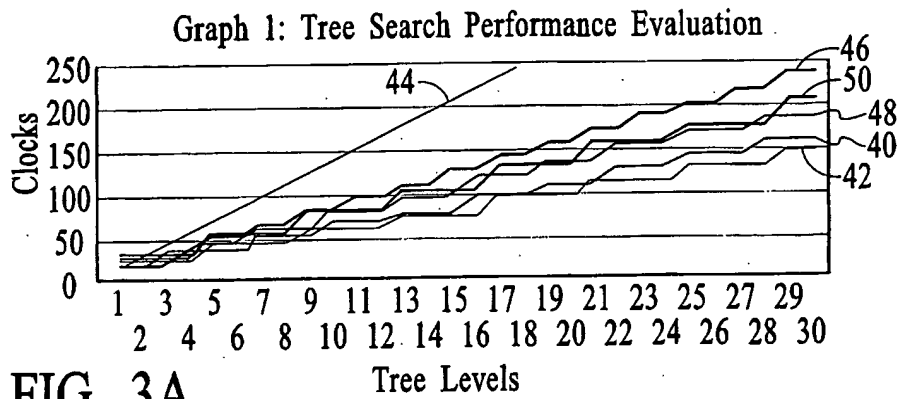
| Reference Size (table size) | Levels/ Reference | Latency/ Reference | Tree Eff. | Tree Search Performance | BusTime/ Reference | Bus Eff. | Memory Bus Resource |
|---------------------------------|----------------------|-----------------------|--------------|----------------------------|-----------------------|-------------|------------------------|
| 1 PSCB (2x4 byte block) | 1 level (12 ref.) | 14 clocks avg. | 7% | 168 clocks avg. | 5.5 cycles avg. | 9% | 66 cycles avg. |
| 3 PSCB's (24 byte block) | 2 levels (6 ref.) | 16 clocks avg. | 13% | 96 clocks avg. | 6 cycles avg. | 17% | 36 cycles avg. |
| 3.5 PSCB's (2x28 byte block) | 3 levels (4 ref.) | 16 clocks avg. | 19% | 64 clocks avg. | 6 cycles avg. | 25% | 24 cycles avg. |
| 7 PSCB's (56 byte block) | 3 levels (4 ref.) | 19 clocks avg. | 16% | 76 clocks avg. | 9 cycles avg. | 17% | 36 cycles avg. |
| 7.5 PSCB's (2x60 byte block) | 4 levels (3 ref.) | 19 clocks avg. | 21% | 57 clocks avg. | 9 cycles avg. | 22% | 27 cycles avg. |
| 15 PSCB's (120 byte block) | 4 levels (3 ref.) | 26 clocks | 15% | 78 clocks | 16 cycles | 13% | 48 cycles |

FIG. 2

Table 2. Optimization of LPM Group Size based on 12 Level Tree

| Reference Size (table size) | Levels/ Reference | Latency/ Reference | Tree Eff. | Tree Search Performance | BusTime/ Reference | Bus Eff. | Memory Bus Resource |
|---------------------------------|----------------------|-----------------------|--------------|----------------------------|-----------------------|-------------|------------------------|
| 1 PSCB (2x7 byte block) | 1 level (12 ref.) | 14 clocks avg. | 7% | 168 clocks avg. | 5.5 cycles avg. | 16% | 66 cycles avg. |
| 1.5 PSCB's (2x21 byte block) | 2 levels (6 ref.) | 16 clocks avg. | 13% | 96 clocks avg. | 6 cycles avg. | 29% | 36 cycles avg. |
| 3.5 PSCB's (2x49 byte block) | 3 levels (4 ref.) | 19 clocks avg. | 16% | 76 clocks avg. | 9 cycles avg. | 29% | 36 cycles avg. |

FIG. 4



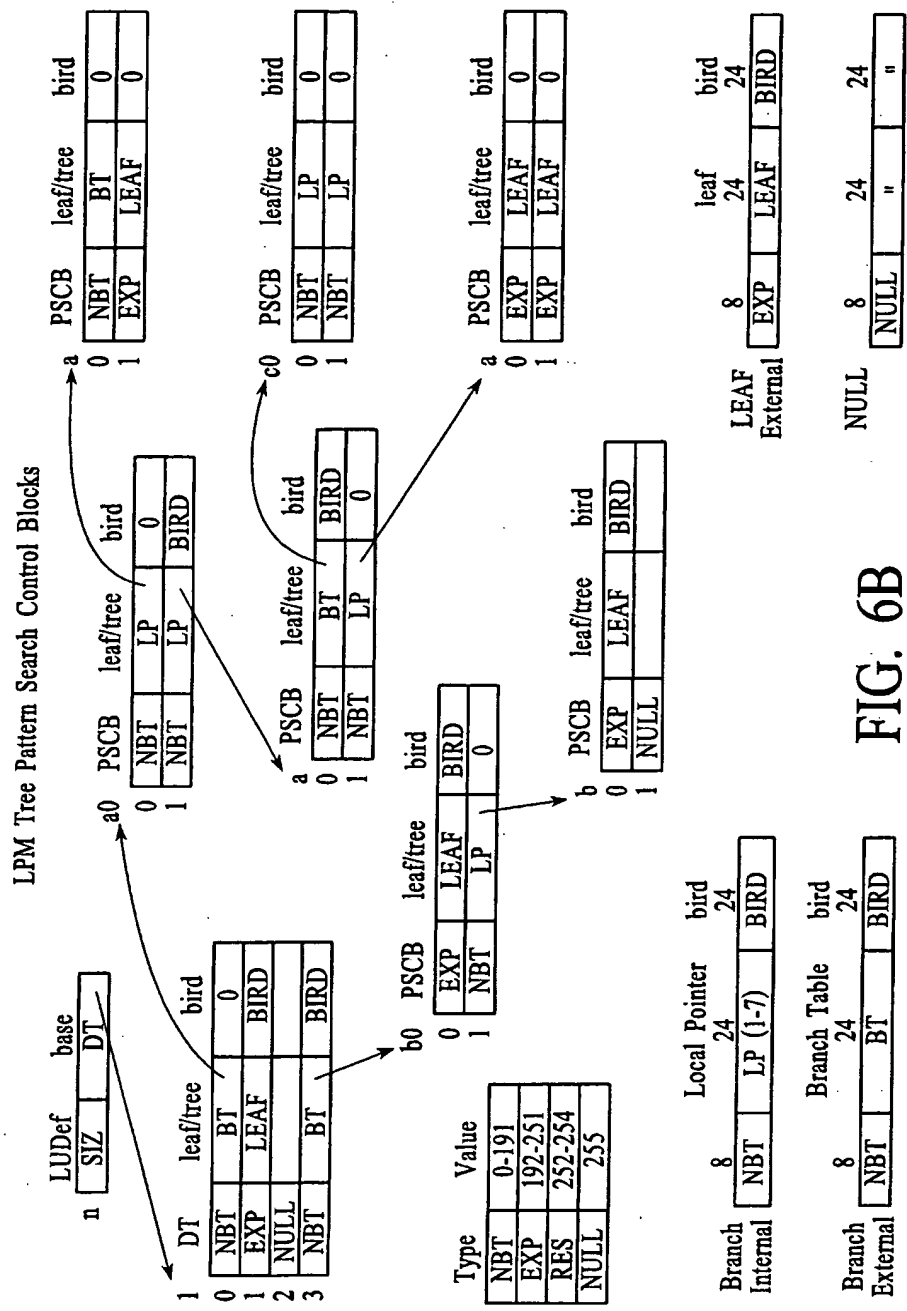


FIG. 6B

